

## CLAIMS

### WHAT IS CLAIMED IS:

- 1    1.    An apparatus for use in a cordless device, comprising:  
2            an antenna component configured to couple to a radio transmitter, the antenna  
3            component further configured for electromagnetic propagation of a signal  
4            from the radio transmitter; and  
5            a metallized membrane of a keyswitch matrix system, the metallized membrane  
6            having a surface that comprises a first geometric shape printed with  
7            conductive ink, the first geometric shape configured to couple with the  
8            antenna component.
- 1    2.    The apparatus of claim 1, wherein the first geometric shape printed on the metallized  
2    membrane comprises a ground plane.
- 1    3.    The apparatus of claim 1, wherein the antenna component is configured to form an  
2    antenna loop.
- 1    4.    The apparatus of claim 1, wherein the signal corresponds to a pressing of a key, the  
2    signal being generated in the keyswitch matrix system by conductive traces electrically  
3    coupling upon the pressing of the key.
- 1    5.    The apparatus of claim 1, wherein the metallized membrane is one of a top, a middle,  
2    or a bottom membrane in a three layer keyswitch matrix system.
- 1    6.    The apparatus of claim 1, further comprising a second metallized membrane having a  
2    second geometric shape printed with conductive ink, the second geometric shape coupled to  
3    the first geometric shape and configured to form at least part of an antenna.

1 7. The apparatus of claim 1, wherein the cordless device is one of a keyboard, a mouse,  
2 a digital camera, a joystick, or a game pad.

1 8. An apparatus for use in a cordless device, comprising:  
2 means for propagating electromagnetic energy through coupling to a radio  
3 transmitter; and  
4 means for electrically grounding configured to couple to a radio frequency  
5 transmission system, the means for electrically grounding printed on a  
6 membrane of a keyswitch matrix system and coupled to the means for  
7 propagating.

1 9. The apparatus of claim 8, wherein the means for propagating is configured to from a  
2 loop antenna.

1 10. The apparatus of claim 8, wherein the radio frequency transmission system comprises  
2 one of a transmitter, a receiver, or a transceiver.

1 11. The apparatus of claim 8, wherein the keyswitch matrix system is within one of a  
2 keyboard, a mouse, a digital camera, a joystick, or a game pad.

1 12. A method of manufacturing antenna components on a membrane keyswitch assembly  
2 having a plurality of membranes, the method comprising:  
3 printing with an electrically conductive printing substance a geometric shape on a  
4 surface of one of the plurality of membranes, the geometric shape forming a  
5 ground plane; and  
6 electrically coupling the printed geometric shape with one or more antenna  
7 components.

1 13. The method of claim 12, wherein the printing includes one of screen printing, ink jet  
2 printing, and laser printing.

1 14. The method of claim 12, wherein the electrically conductive printing substance is a  
2 metallic ink.

1 15. The method of claim 12, wherein the geometric shape is one of a, grid, or a  
2 continuous polygonal surface.